

Title (en)

METHOD FOR PRODUCING A COMPOSITE CONCENTRATOR LENS PANEL FOR PHOTOVOLTAIC MODULES

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES VERBUNDKONZENTRATOR-LINSEN PANELS FÜR PHOTOVOLTAIKMODULE

Title (fr)

PROCÉDÉ DE FABRICATION D'UN PANNEAU DE CONCENTRATION À LENTILLES COMPOSITE POUR MODULES PHOTOÉLECTRIQUES

Publication

**EP 2159609 A1 20100303 (EN)**

Application

**EP 07861012 A 20070615**

Priority

RU 2007000324 W 20070615

Abstract (en)

[origin: WO2008153435A1] The invention relates to solar energy, in particular, to solar radiation concentrators. The inventive method for producing a composite concentrator lens panel for photovoltaic modules by producing negative Fresnel lenses and by taking positive copies therefrom, consists in connecting negative Fresnel square-aperture lenses, manufactured by diamond turning, into an assembly by the end faces thereof, in producing an intermediate panel by filling the space between the assembly with negative Fresnel lenses and a silicate glass or a flexible sheet material placed above said assembly with two-component silicon and in polymerising said two-component silicon, in mechanically separating the intermediate panel from the assembly, in copying the intermediate panel on a polyurethane matrix by polymerising two-component polyurethane in the space between the intermediate panel and a flat sheet material, in separating the thus produced polyurethane matrix by bending it, in securing said polyurethane matrix on a solid base and in filling it with a two-component silicon compound, the thickness of which 0.1 mm or more greater than the depth of the Fresnel lens deeping into the polyurethane matrix, in placing the silicate glass above the silicon with a primer applied to the surface thereof, in pressing out the excessive silicon mixture to a thickness not less than 0.1 mm, in polymerising the mixture and in separating the glass with the lens panel from the polyurethane matrix by bending it.

Abstract (de)

Die Erfindung betrifft ein Verfahren zur Herstellung einer Konzentratorlinsenplatte aus Verbundstoff für photoelektrische Module, das die Herstellung von negativen Fresnel-Linsen und die Fertigung von positiven Kopien derselben einschließt. Die Leistungsfähigkeit und die Wirtschaftlichkeit des Verfahrens wird dadurch erhöht und dabei eine hohe Lebensdauer der Linsenplatten und eine hohe Qualität der Fresnel-Linsen sichergestellt, wenn zuerst durch Diamantdrehens eine Art Negativ-Form mit hoher Qualität gebildet wird, die danach für ein wiederholtes Herstellen von Konzentratorlinsenplatte mit positiven Fresnel-Linsen verwendet wird.

IPC 8 full level

**B29D 11/00** (2006.01); **G02B 3/08** (2006.01)

CPC (source: EP)

**B29D 11/00269** (2013.01); **G02B 3/08** (2013.01); **H01L 31/0543** (2014.12); **F24S 23/31** (2018.04); **Y02E 10/52** (2013.01)

Cited by

DE102012004963A1; WO2013135222A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

**EP 2159609 A1 20100303**; **EP 2159609 A4 20140219**; WO 2008153435 A1 20081218

DOCDB simple family (application)

**EP 07861012 A 20070615**; RU 2007000324 W 20070615